

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A spray pyrolysis method for the synthesis of closed-structure nanoparticles of metal chalcogenides having a lamellar crystallographic structure, of the general formula (I) M_aX_b , said method comprising the steps of:

(a) providing a solution of at least one precursor having the ~~[[of]]~~ formula (II) $(A)_cM(X)_d$ dissolved in a solvent,

(b) providing a liquid aerosol by atomizing the solution obtained in step a) into fine droplets in suspension in an inert carrier gas, and

(c) pyrolyzing the liquid aerosol obtained in step c);

wherein, in formulas (I) and (II):

A represents a cation,

M represents a transition metal or a metal from group III, IV or V of the periodic table of the elements,

X represents a chalcogen selected from oxygen, sulfur, selenium and tellurium,

a and b each represents the proportion of metal and of chalcogen, respectively, in formula (I),

c and d each represents the proportion of cations and of chalcogens, respectively, in formula (II),

M and X represent a metal and a chalcogen, respectively, of a metal chalcogenide M_aX_b having a lamellar crystallographic structure.

2. (Previously Presented) The method as claimed in claim 1, said method comprising the following steps:

formation of a solution of said at least one precursor of formula (II) in a solvent,
atomization of said solution in liquid aerosol form by a nebulizer, through which the carrier gas is flowing,

injection of the aerosol into a heated furnace to evaporate the solvent and to react and/or break down said at least one precursor of formula (II) so as to form the nanoparticles,

transport by the carrier gas of the nanoparticles to the furnace outlet, and
recovery of the nanoparticles at the furnace outlet.

Claim 3. (Canceled)

4. (Currently Amended) The method as claimed in claim 1, wherein A is K^+ , Na^+ or NH_4^+ [[.]] .

5. (Previously Presented) The method as claimed in claim 1, wherein M is a transition metal selected from among Ti, Zr, Hf, V, Nb, Ta, Mo, W, Re, Co, Ni, Pt, Pd, Cr and Ru.

6. (Previously Presented) The method as claimed in claim 1, wherein M is Ga or In.

7. (Previously Presented) The method as claimed in claim 1, wherein M is Sn, Pb or Ge.

8. (Previously Presented) The method as claimed in claim 1, wherein M is Bi.

Claim 9. (Canceled)

10. (Previously Presented) The method as claimed in claim 4, wherein said at least one precursor of formula (II) is a tetrathiommetallate or a tetraselenometallate.

11. (Previously Presented) The method as claimed in claim 10, wherein M is molybdenum or tungsten.

12. (Previously Presented) The method as claimed in claim 1, wherein said carrier gas is an inert gas selected from nitrogen and argon and/or hydrogen.

13. (Previously Presented) The method as claimed in claim 1, wherein said solvent is a polar solvent.

14. (Previously Presented) The method as claimed in claim 1, wherein said nanoparticles are nanotubes, fullerenes and/or nanoboxes.

15. (Currently Amended) Nanoparticles of metal chalcogenides having a lamellar crystallographic structure and having the formula MX_2 , obtained ~~obtainable~~ by the method of claim 1, said nanoparticles having the form of nanoboxes made up of closed, generally hollow rectangular parallelepipeds, wherein M represents a transition metal or a metal from group $[[III,]]$ IV $[[or V]]$ of the periodic table of the elements, and X represents a chalcogen selected from oxygen, sulfur, selenium and tellurium.

16. (Currently Amended) The method as claimed in claim 2, wherein the nebulizer ~~regulizer~~ is a pneumatic or ultrasonic type nebulizer.

17. (Previously Presented) the method as claimed in claim 13, wherein the solvent is water, ethanol, or a mixture thereof.